

**REMARKS**

This communication is a full and timely response to the non-final Office Action dated November 3, 2004 (Paper No./Mail Date 102004). By this communication, claims 1, 2, 5, 6, 9, 11, 15, and 17 are canceled without prejudice or disclaimer of the underlying subject matter; claims 3, 4, 7, 8, 13, 14, and 16 have been amended; and claim 18 has been added.

Claims 3, 4, 7, and 8 have been amended to reduce the number of elements listed in the Markush group. No new matter has been added.

Claims 13 and 14 have been amended to change the multiple dependency. No new matter has been added.

Claim 16 has been amended to recite an anode for a fuel cell comprising a first layer whose catalyst component is one of (1) gold fine particles, (2) gold fine particles and at least one member selected from a first group consisting of titanium, vanadium, gallium, zirconium, niobium, cerium, tantalum, indium, and the oxides of these metals, (3) gold fine particles and at least one member selected from a second group consisting of platinum, ruthenium, and ruthenium oxides, and (4) gold fine particles, at least one member selected from the first group and at least one member selected from the second group, wherein the first layer is formed on a platinum catalyst layer. Support for the changes to claim 16 can be found variously throughout the specification, for example, at paragraphs [0062] and [0072] of corresponding U.S. Patent Application Publication No. 20040115515.

Claims 3, 4, 7, 8, 10, 12-14, 16, and 18 are pending where claims 3, 7, and 16 are independent.

**Priority Document**

Applicant notes and appreciates that the receipt of the claim for priority and the certified document supporting that claim has been acknowledged. A certified copy is concurrently filed to perfect the priority claim.

**Claim Objection**

Claim 15 was objected to under 37 C.F.R. §1.75(c), for improper dependency. In particular, the Office Action alleges that claim 15 fails to further limit the subject matter of a previous claim. As discussed above, claim 15 has been canceled without prejudice. Thus, the

objection to claim 15 is moot. Accordingly, Applicant respectfully requests that the objection to the claim 15 be withdrawn.

#### **Rejections under 35 U.S.C. §112**

Claim 13 was rejected under 35 U.S.C. §112, second paragraph, as indefinite. Applicant respectfully traverses this rejection.

As discussed above, claim 13 has been amended to change the dependency and remove the language “further including an anode containing catalyst.” Accordingly, Applicant respectfully requests that the rejection of claim 13 under §112, second paragraph should be withdrawn.

#### **Rejections under 35 U.S.C. §102**

Claims 1, 2, 9, 13 and 15 were rejected under 35 U.S.C. § 102(b) as anticipated by *Taylor et al.*, U.S. Patent No. 5,041,195. Applicant respectfully traverses this rejection.

Regarding the rejection of claims 1, 2, 9 and 15, these claims have been canceled without prejudice. Thus, the rejection of these claims is moot. Accordingly, Applicant respectfully requests that the rejection of claims 1, 2, 9, and 15 under §102(b) be withdrawn.

Claim 13 has been amended so that it depends from one of claims 3, 4, 7, 8 10, and 12. Thus, the rejection of claim 13 under §102(b) is moot. Applicant respectfully requests that the rejection of claim 13 be withdrawn.

#### **Rejections under 35 U.S.C. §103**

Claims 3-8, 10-12, 14, 16 and 17 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Taylor*. Applicant respectfully traverses this rejection.

Claim 3 recites an anode catalyst for a fuel cell comprising gold fine particles and at least one member selected from the group consisting of gallium, indium and the oxides of these metals.

Claim 7 recites an anode catalyst for a fuel cell comprising: gold fine particles and at least one member selected from the group consisting of gallium, indium, and the oxides of these metals; and at least one member selected from the group consisting of platinum, ruthenium, and ruthenium oxides.

*Taylor* discloses a gold electrocatalyst material that is useful in electrodes, for the reduction of oxygen or peroxide to water or hydroxide. The metallic component in the

electrocatalytic material of this invention can include other metals besides gold, e.g. other Group I-B metals and metals of Groups VII, IVB, VB, VI-B, VII-B, etc., particularly nickel, cobalt, and the second and third triads of Group VIII of the Periodic Table. *Taylor*, however, fails to disclose, teach, or suggest "at least one member selected from the group consisting of gallium, indium and the oxides of these metals" as recited in claims 3 and 7.

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." ACS Hosp. Sys. V. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). For at least the above reasons, Applicant respectfully requests that the rejection of claims 3 and 7 be withdrawn and these claims be allowed.

Claims 4, 10, 13, and 14 depend from claim 3, and claims 8, 12, 13, and 14 depend from claim 7. By virtue of this dependency, Applicant submits that claims 4, 8, 10, 12, 13, and 14 are allowable for at least the same reasons given above with respect to claims 3 and 7, where applicable. In addition, Applicant submits that claims 4, 8, 10, 12, 13, and 14 are further distinguished over *Taylor* by the additional elements recited therein, and particularly with respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 4, 8, 10, 12, 13, and 14 under 35 U.S.C. §103 be withdrawn, and these claims be allowed.

Claim 16 has been amended. Claim 16 now recites an anode for a fuel cell comprising a first layer whose catalyst component is one of (1) gold fine particles, (2) gold fine particles and at least one member selected from a first group consisting of titanium, vanadium, gallium, zirconium, niobium, cerium, tantalum, indium, and the oxides of these metals, (3) gold fine particles and at least one member selected from a second group consisting of platinum, ruthenium, and ruthenium oxides, and (4) gold fine particles, at least one member selected from the first group and at least one member selected from the second group, wherein the first layer is formed on a platinum catalyst layer.

In particular, claim 16 recites that a first layer of at least gold fine particles is formed on a platinum catalyst layer.

As discussed above, *Taylor* discloses an electrocatalyst material that contains gold and other elements such as Group I-B metals and metals of Groups VII, IVB, VB, VI-B, VII-B, etc., particularly nickel, cobalt, and the second and third triads of Group VIII of the Periodic Table. *Taylor*, however, fails to disclose, teach, or suggest at least that a gold layer is formed on a platinum catalyst layer as recited in claim 16. Thus, a *prima facie* case for obviousness has not been established.

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Sys. V. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). For at least the above reasons, Applicant respectfully requests that the rejection of claim 16 be withdrawn, and this claim be allowed.

#### **Rejection under 35 U.S.C. §§ 102(b) and 103(a)**

Claims 1-17 have been rejected under 35 U.S.C. § 102(b) as being anticipated by or in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over *Starz et al.*, U.S. Patent Application Publication No. 2002/0034675. Applicant respectfully traverses this rejection.

Regarding the rejection of claims 1, 2, 9 and 15, these claims have been canceled without prejudice. Thus, the rejection of these claims is moot. Accordingly, Applicant respectfully requests that the rejection of claims 1, 2, 5, 6, 9, 11, 15, and 17 under §§102(b) and 103(a) be withdrawn.

*Starz* discloses noble metal nanoparticles that contain noble metals alone or noble metals in combination with base metals. The noble metal nanoparticles can be directly applied to the surfaces of a polymer electrolyte membrane. The polymer electrolyte membrane can be coated with two catalyst layers. The catalyst layers comprise a supported electrocatalyst and unsupported nanoparticles. The nanoparticles may contain one or more noble metals and optionally in addition at least one base metal. Further, the nanoparticles preferably contain at least one noble metal from the group platinum, palladium, rhodium, iridium, ruthenium, osmium, gold, and silver. Suitable base metals are iron, cobalt, nickel, copper, titanium, vanadium, chromium, manganese, molybdenum, tungsten, and rhenium.

*Starz*, however, fails to disclose, teach, or suggest “at least one member selected from the group consisting of gallium, indium and the oxides of these metals” as recited in independent claims 3 and 7. Thus, *Starz* neither anticipates nor renders these claims obvious.

In addition, *Starz* fails to disclose, teach, or suggest at least a first layer of at least gold fine particles is formed on a platinum catalyst layer. In contrast, *Starz* discloses that catalyst layers 5 and 6 are both formed on and separated by a polymer electrolyte membrane (Fig. 3). Thus, *Starz* neither anticipates nor renders claim 16 obvious.

To properly anticipate a claim, the document must disclose, explicitly or implicitly, each and every feature recited in the claim. See Verdegall Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). *Starz* fails to disclose, teach, or suggest every element recited in independent claims 3, 7, and 16, therefore these claims are not anticipated by *Starz*. Accordingly, Applicant respectfully requests that the rejection of claims 3, 7, and 16 under 35 U.S.C. §102 be withdrawn, and these claims be allowed.

Alternatively, to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, obviousness “cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination.” ACS Hosp. Sys. V. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). For at least the above reasons, Applicant respectfully requests that the rejection of claims 3, 7, and 16 be withdrawn, and these claim be allowed.

Claims 4, 10, 13, and 14 depend from claim 3, and claims 8, 12, 13, and 14 depend from claim 7. By virtue of this dependency, Applicant submits that claims 4, 8, 10, 12, 13, and 14 are allowable for at least the same reasons given above with respect to claims 3 and 7, where applicable. In addition, Applicant submits that claims 4, 8, 10, 12, 13, and 14 are further distinguished over *Starz* by the additional elements recited therein, and particularly with respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 4, 8, 10, 12, 13, and 14 under 35 U.S.C. §103 be withdrawn, and these claims be allowed.

#### **Newly Added Claim**

As discussed above, claim 18 has been newly added. Claim 18 depends from claim 16 and recites a fuel cell comprising an anode according to claim 16. By virtue of this dependency,

Applicant submits that claim 18 is allowable for at least the same reasons given above with respect to claim 16. Accordingly, Applicant requests that claim 18 be considered and allowed.

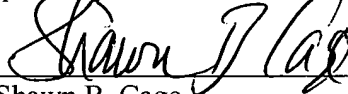
**Conclusion**

Based on at least the foregoing amendments and remarks, Applicants submit that claims 3, 4, 7, 8, 10, 12-14, 16, and 18 are allowable, and this application is in condition for allowance. Accordingly, Applicants request favorable reexamination and reconsideration of the application. In the event the Examiner has any comments or suggestions for placing the application in even better form, Applicants request that the Examiner contact the undersigned attorney at the number listed below.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. AIS-0010 from which the undersigned is authorized to draw.

Dated: February 3, 2005

Respectfully submitted,

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